PP104. The essential-oil composition of Crocus pestalozzae Boiss. from Istanbul

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Crocus (Iridaceae) species are well-known for their use as spices. In Turkey, the genus Crocus is represented with 62 taxa. In the literature, there is no particular report on the chemistry of volatile or non-volatile secondary metabolites of C. pestalozzae Boiss. The aim of the current study was to contribute novel information on the chemistry of the volatile secondary metabolites of C. pestalozzae. The plant material used in this study was collected from Kanuni Sultan Süleyman City Forest in Istanbul in January 2016. The essential oil of air-dried aerial part of C. pestalozzae was obtained by hydrodistillation (3 h) using a Clevenger-type apparatus. The obtained essential-oil yield was below 0.01 mL. The essential oil was trapped in n-hexane (1 mL) and dried over anhydrous Na2SO4. The essential oil was analyzed by GC-MS without further dilution. The essential oil was analyzed with an Agilent 5977 MSD GC-MS system operating in EI mode; injector and MS transfer line temperatures were set at 250 °C. Splitless injection was used in the analysis. Innowax FSC column (60 m x 0.25 mm, 0.25 µm film thickness) and helium as the carrier gas (1 mL/min) were used in GC-MS analyses. The oven temperature program was: 60 °C for 10 min and then raised to 220 °C at a rate of 4 °C/min, afterward the temperature was kept constant at 220 °C for 10 min and then raised to 240 °C at a rate of 1 °C/min. Mass spectra were recorded at 70 eV with the mass range m/z 35-425. Relative amounts of the separated compounds were calculated from the integration of the peaks in MS chromatograms. Identification of essential-oil components was carried out by comparison of their retention indices (RI), relative to a series of n-alkanes (C5 to C30), with the literature values, as well as by mass spectral comparison. Fifty-four compounds were identified representing 86.2% of the detected oil constituents. The main components of the oil were heptacosane (18.2%), pentacosane (17.0%), nonacosane (13.1%), heneicosane (7.2%), and 1-docosanol (5.3%). Safranal and its derivatives were detected in the essential oil but only in very small amounts. Due to the low amounts of safranal and other commonly observed volatile compounds of Crocus species [1], one would expect to observe a different volatile secondary metabolite profile if headspace or SPME sampling were employed.

Reference:

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